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SEQUENCE LISTING   JC20 Rec'd PCT/PTO 1 0 AUG 2005

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<151> 2003-02-11

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<211> 528
<212> PRT
<213> Homo sapiens

<400> 13

```
Met Asn Asp His Leu His Val Gly Ser His Ala His Gly Gln Ile Gln
1               5                   10                  15


Val Gln Gln Leu Phe Glu Asp Asn Ser Asn Lys Arg Thr Val Leu Thr
            20                  25                  30


Thr Gln Pro Asn Gly Leu Thr Thr Val Gly Lys Thr Gly Leu Pro Val
        35                  40                  45


Val Pro Glu Arg Gln Leu Asp Ser Ile His Arg Arg Gln Gly Ser Ser
    50                  55                  60


Thr Ser Leu Lys Ser Met Glu Gly Met Gly Lys Val Lys Ala Thr Pro
65                  70                  75                  80


Met Thr Pro Glu Gln Ala Met Lys Gln Tyr Met Gln Lys Leu Thr Ala
                85                  90                  95


Phe Glu His His Glu Ile Phe Ser Tyr Pro Glu Ile Tyr Phe Leu Gly
            100                 105                 110


Leu Asn Ala Lys Lys Arg Gln Gly Met Thr Gly Gly Pro Asn Asn Gly
        115                 120                 125


Gly Tyr Asp Asp Asp Gln Gly Ser Tyr Val Gln Val Pro His Asp His
    130                 135                 140
```

Val Ala Tyr Arg Tyr Glu Val Leu Lys Val Ile Gly Lys Gly Ser Phe
145   150   155   160

Gly Gln Val Val Lys Ala Tyr Asp His Lys Val His Gln His Val Ala
            165   170   175

Leu Lys Met Val Arg Asn Glu Lys Arg Phe His Arg Gln Ala Ala Glu
            180   185   190

Glu Ile Arg Ile Leu Glu His Leu Arg Lys Gln Asp Lys Asp Asn Thr
            195   200   205

Met Asn Val Ile His Met Leu Glu Asn Phe Thr Phe Arg Asn His Ile
    210   215   220

Cys Met Thr Phe Glu Leu Leu Ser Met Asn Leu Tyr Glu Leu Ile Lys
225   230   235   240

Lys Asn Lys Phe Gln Gly Phe Ser Leu Pro Leu Val Arg Lys Phe Ala
            245   250   255

His Ser Ile Leu Gln Cys Leu Asp Ala Leu His Lys Asn Arg Ile Ile
            260   265   270

His Cys Asp Leu Lys Pro Glu Asn Ile Leu Leu Lys Gln Gln Gly Arg
    275   280   285

Ser Gly Ile Lys Val Ile Asp Phe Gly Ser Ser Cys Tyr Glu His Gln
    290   295   300

Arg Val Tyr Thr Tyr Ile Gln Ser Arg Phe Tyr Arg Ala Pro Glu Val
305   310   315   320

Ile Leu Gly Ala Arg Tyr Gly Met Pro Ile Asp Met Trp Ser Leu Gly
            325   330   335

Cys Ile Leu Ala Glu Leu Leu Thr Gly Tyr Pro Leu Leu Pro Gly Glu
            340   345   350

Asp Glu Gly Asp Gln Leu Ala Cys Met Ile Glu Leu Leu Gly Met Pro
            355   360   365

Ser Gln Lys Leu Leu Asp Ala Ser Lys Arg Ala Lys Asn Phe Val Ser
    370   375   380

Ser Lys Gly Tyr Pro Arg Tyr Cys Thr Val Thr Thr Leu Ser Asp Gly
385   390   395   400

```
Ser Val Val Leu Asn Gly Gly Arg Ser Arg Arg Gly Lys Leu Arg Gly
            405             410             415

Pro Pro Glu Ser Arg Glu Trp Gly Asn Ala Leu Lys Gly Cys Asp Asp
            420             425             430

Pro Leu Phe Leu Asp Phe Leu Lys Gln Cys Leu Glu Trp Asp Pro Ala
            435             440             445

Val Arg Met Thr Pro Gly Gln Ala Leu Arg His Pro Trp Leu Arg Arg
    450             455             460

Arg Leu Pro Lys Pro Pro Thr Gly Glu Lys Thr Ser Val Lys Arg Ile
465             470             475             480

Thr Glu Ser Thr Gly Ala Ile Thr Ser Ile Ser Lys Leu Pro Pro Pro
            485             490             495

Ser Ser Ser Ala Ser Lys Leu Arg Thr Asn Leu Ala Gln Met Thr Asp
            500             505             510

Ala Asn Gly Asn Ile Gln Gln Arg Thr Val Leu Pro Lys Leu Val Ser
            515             520             525
```

<210> 14
<211> 601
<212> PRT
<213> Homo sapiens

<400> 14

```
Met Leu Thr Arg Lys Pro Ser Ala Ala Ala Pro Ala Ala Tyr Pro Thr
1               5               10              15

Gly Arg Gly Gly Asp Ser Ala Val Arg Gln Leu Gln Ala Ser Pro Gly
            20              25              30

Leu Gly Ala Gly Pro Thr Arg Ser Gly Val Gly Thr Gly Pro Pro Ser
        35              40              45

Pro Ile Ala Leu Pro Pro Leu Arg Ala Ser Asn Ala Ala Ala Ala Ala
    50              55              60

His Thr Ile Gly Gly Ser Lys His Thr Met Asn Asp His Leu His Val
65              70              75              80

Gly Ser His Ala His Gly Gln Ile Gln Val Gln Gln Leu Phe Glu Asp
            85              90              95
```

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Asn Ser Asn Lys Arg Thr Val Leu Thr Thr Gln Pro Asn Gly Leu Thr
                100   105   110

Thr Val Gly Lys Thr Gly Leu Pro Val Val Pro Glu Arg Gln Leu Asp
            115   120   125

Ser Ile His Arg Arg Gln Gly Ser Ser Thr Ser Leu Lys Ser Met Glu
        130   135   140

Gly Met Gly Lys Val Lys Ala Thr Pro Met Thr Pro Glu Gln Ala Met
145   150   155   160

Lys Gln Tyr Met Gln Lys Leu Thr Ala Phe Glu His His Glu Ile Phe
                165   170   175

Ser Tyr Pro Glu Ile Tyr Phe Leu Gly Leu Asn Ala Lys Lys Arg Gln
                180   185   190

Gly Met Thr Gly Gly Pro Asn Asn Gly Gly Tyr Asp Asp Asp Gln Gly
            195   200   205

Ser Tyr Val Gln Val Pro His Asp His Val Ala Tyr Arg Tyr Glu Val
        210   215   220

Leu Lys Val Ile Gly Lys Gly Ser Phe Gly Gln Val Val Lys Ala Tyr
225   230   235   240

Asp His Lys Val His Gln His Val Ala Leu Lys Met Val Arg Asn Glu
                245   250   255

Lys Arg Phe His Arg Gln Ala Ala Glu Glu Ile Arg Ile Leu Glu His
                260   265   270

Leu Arg Lys Gln Asp Lys Asp Asn Thr Met Asn Val Ile His Met Leu
            275   280   285

Glu Asn Phe Thr Phe Arg Asn His Ile Cys Met Thr Phe Glu Leu Leu
    290   295   300

Ser Met Asn Leu Tyr Glu Leu Ile Lys Lys Asn Lys Phe Gln Gly Phe
305   310   315   320

Ser Leu Pro Leu Val Arg Lys Phe Ala His Ser Ile Leu Gln Cys Leu
            325   330   335

Asp Ala Leu His Lys Asn Arg Ile Ile His Cys Asp Leu Lys Pro Glu

Asn Ile Leu Leu Lys Gln Gln Gly Arg Ser Gly Ile Lys Val Ile Asp
        355   360   365

Phe Gly Ser Ser Cys Tyr Glu His Gln Arg Val Tyr Thr Tyr Ile Gln
        370   375   380

Ser Arg Phe Tyr Arg Ala Pro Glu Val Ile Leu Gly Ala Arg Tyr Gly
385   390   395   400

Met Pro Ile Asp Met Trp Ser Leu Gly Cys Ile Leu Ala Glu Leu Leu
                405   410   415

Thr Gly Tyr Pro Leu Leu Pro Gly Glu Asp Glu Gly Asp Gln Leu Ala
                420   425   430

Cys Met Ile Glu Leu Leu Gly Met Pro Ser Gln Lys Leu Leu Asp Ala
        435   440   445

Ser Lys Arg Ala Lys Asn Phe Val Ser Ser Lys Gly Tyr Pro Arg Tyr
        450   455   460

Cys Thr Val Thr Thr Leu Ser Asp Gly Ser Val Val Leu Asn Gly Gly
465   470   475   480

Arg Ser Arg Arg Gly Lys Leu Arg Gly Pro Pro Glu Ser Arg Glu Trp
                485   490   495

Gly Asn Ala Leu Lys Gly Cys Asp Asp Pro Leu Phe Leu Asp Phe Leu
                500   505   510

Lys Gln Cys Leu Glu Trp Asp Pro Ala Val Arg Met Thr Pro Gly Gln
        515   520   525

Ala Leu Arg His Pro Trp Leu Arg Arg Arg Leu Pro Lys Pro Pro Thr
        530   535   540

Gly Glu Lys Thr Ser Val Lys Arg Ile Thr Glu Ser Thr Gly Ala Ile
545   550   555   560

Thr Ser Ile Ser Lys Leu Pro Pro Pro Ser Ser Ser Ala Ser Lys Leu
                565   570   575

Arg Thr Asn Leu Ala Gln Met Thr Asp Ala Asn Gly Asn Ile Gln Gln
                580   585   590

```
Arg Thr Val Leu Pro Lys Leu Val Ser
        595                 600
```

```
<210>  15
<211>  553
<212>  PRT
<213>  Homo sapiens
```

```
<400>  15
```

```
Met Met Ile Asp Glu Thr Lys Cys Pro Pro Cys Ser Asn Val Leu Cys
1               5               10                  15
```

```
Asn Pro Ser Glu Pro Pro Pro Pro Arg Arg Leu Asn Met Thr Ala Glu
            20                  25                  30
```

```
Gln Phe Thr Gly Asp His Thr Gln His Phe Leu Asp Gly Gly Glu Met
            35                  40                  45
```

```
Lys Val Glu Gln Leu Phe Gln Glu Phe Gly Asn Arg Lys Ser Asn Thr
    50                  55                  60
```

```
Ile Gln Ser Asp Gly Ile Ser Asp Ser Glu Lys Cys Ser Pro Thr Val
65                  70                  75                  80
```

```
Ser Gln Gly Lys Ser Ser Asp Cys Leu Asn Thr Val Lys Ser Asn Ser
            85                  90                  95
```

```
Ser Ser Lys Ala Pro Lys Val Val Pro Leu Thr Pro Glu Gln Ala Leu
            100                 105                 110
```

```
Lys Gln Tyr Lys His His Leu Thr Ala Tyr Glu Lys Leu Glu Ile Ile
            115                 120                 125
```

```
Asn Tyr Pro Glu Ile Tyr Phe Val Gly Pro Asn Ala Lys Lys Arg His
    130                 135                 140
```

```
Gly Val Ile Gly Gly Pro Asn Asn Gly Gly Tyr Asp Asp Ala Asp Gly
145                 150                 155                 160
```

```
Ala Tyr Ile His Val Pro Arg Asp His Leu Ala Tyr Arg Tyr Glu Val
            165                 170                 175
```

```
Leu Lys Ile Ile Gly Lys Gly Ser Phe Gly Gln Val Ala Arg Val Tyr
            180                 185                 190
```

```
Asp His Lys Leu Arg Gln Tyr Val Ala Leu Lys Met Val Arg Asn Glu
            195                 200                 205
```

Lys Arg Phe His Arg Gln Ala Ala Glu Glu Ile Arg Ile Leu Glu His
210   215   220

Leu Lys Lys Gln Asp Lys Thr Gly Ser Met Asn Val Ile His Met Leu
225   230   235   240

Glu Ser Phe Thr Phe Arg Asn His Val Cys Met Ala Phe Glu Leu Leu
                 245   250   255

Ser Ile Asp Leu Tyr Glu Leu Ile Lys Lys Asn Lys Phe Gln Gly Phe
             260   265   270

Ser Val Gln Leu Val Arg Lys Phe Ala Gln Ser Ile Leu Gln Ser Leu
             275   280   285

Asp Ala Leu His Lys Asn Lys Ile Ile His Cys Asp Leu Lys Pro Glu
         290   295   300

Asn Ile Leu Leu Lys His His Gly Arg Ser Ser Thr Lys Val Ile Asp
305   310   315   320

Phe Gly Ser Ser Cys Phe Glu Tyr Gln Lys Leu Tyr Thr Tyr Ile Gln
                 325   330   335

Ser Arg Phe Tyr Arg Ala Pro Glu Ile Ile Leu Gly Ser Arg Tyr Ser
             340   345   350

Thr Pro Ile Asp Ile Trp Ser Phe Arg Cys Ile Leu Ala Glu Leu Leu
         355   360   365

Thr Gly Gln Pro Leu Phe Pro Gly Glu Asp Glu Gly Asp Gln Leu Ala
    370   375   380

Cys Met Met Glu Leu Leu Gly Met Pro Pro Pro Lys Leu Leu Glu Gln
385   390   395   400

Ser Lys Arg Ala Lys Tyr Phe Ile Asn Ser Lys Gly Ile Pro Arg Tyr
             405   410   415

Cys Ser Val Thr Thr Gln Ala Asp Gly Arg Val Val Leu Val Gly Gly
             420   425   430

Arg Ser Arg Arg Gly Lys Lys Arg Gly Pro Pro Gly Ser Lys Asp Trp
    435   440   445

Gly Thr Ala Leu Lys Gly Cys Asp Asp Tyr Leu Phe Ile Glu Phe Leu
    450   455   460

```
Lys Arg Cys Leu His Trp Asp Pro Ser Ala Arg Leu Thr Pro Ala Gln
465             470             475             480


Ala Leu Arg His Pro Trp Ile Ser Lys Ser Val Pro Arg Pro Leu Thr
            485             490             495


Thr Ile Asp Lys Val Ser Gly Lys Arg Val Val Asn Pro Ala Ser Ala
            500             505             510


Phe Gln Gly Leu Gly Ser Lys Leu Pro Pro Val Val Gly Ile Ala Asn
            515             520             525


Lys Leu Lys Ala Asn Leu Met Ser Glu Thr Asn Gly Ser Ile Pro Leu
    530             535             540


Cys Ser Val Leu Pro Lys Leu Ile Ser
545             550
```

<210> 16
<211> 520
<212> PRT
<213> Homo sapiens

<400> 16

```
Met Pro Ala Ser Glu Leu Lys Ala Ser Glu Ile Pro Phe His Pro Ser
1               5               10              15


Ile Lys Thr Gln Asp Pro Lys Ala Glu Glu Lys Ser Pro Lys Lys Gln
            20              25              30


Lys Val Thr Leu Thr Ala Ala Glu Ala Leu Lys Leu Phe Lys Asn Gln
            35              40              45


Leu Ser Pro Tyr Glu Gln Ser Glu Ile Leu Gly Tyr Ala Glu Leu Trp
    50              55              60


Phe Leu Gly Leu Glu Ala Lys Lys Leu Asp Thr Ala Pro Glu Lys Phe
65              70              75              80


Ser Lys Thr Ser Phe Asp Asp Glu His Gly Phe Tyr Leu Lys Val Leu
            85              90              95


His Asp His Ile Ala Tyr Arg Tyr Glu Val Leu Glu Thr Ile Gly Lys
            100             105             110


Gly Ser Phe Gly Gln Val Ala Lys Cys Leu Asp His Lys Asn Asn Glu
            115             120             125
```

Leu Val Ala Leu Lys Ile Ile Arg Asn Lys Lys Arg Phe His Gln Gln
    130   135   140

Ala Leu Met Glu Leu Lys Ile Leu Glu Ala Leu Arg Lys Lys Asp Lys
145   150   155   160

Asp Asn Thr Tyr Asn Val Val His Met Lys Asp Phe Phe Tyr Phe Arg
                165   170   175

Asn His Phe Cys Ile Thr Phe Glu Leu Leu Gly Ile Asn Leu Tyr Glu
                180   185   190

Leu Met Lys Asn Asn Asn Phe Gln Gly Phe Ser Leu Ser Ile Val Arg
            195   200   205

Arg Phe Thr Leu Ser Val Leu Lys Cys Leu Gln Met Leu Ser Val Glu
    210   215   220

Lys Ile Ile His Cys Asp Leu Lys Pro Glu Asn Ile Val Leu Tyr Gln
225   230   235   240

Lys Gly Gln Ala Ser Val Lys Val Ile Asp Phe Gly Ser Ser Cys Tyr
                245   250   255

Glu His Gln Lys Val Tyr Thr Tyr Ile Gln Ser Arg Phe Tyr Arg Ser
                260   265   270

Pro Glu Val Ile Leu Gly His Pro Tyr Asp Val Ala Ile Asp Met Trp
    275   280   285

Ser Leu Gly Cys Ile Thr Ala Glu Leu Tyr Thr Gly Tyr Pro Leu Phe
    290   295   300

Pro Gly Glu Asn Glu Val Glu Gln Leu Ala Cys Ile Met Glu Val Leu
305   310   315   320

Gly Leu Pro Pro Ala Gly Phe Ile Gln Thr Ala Ser Arg Arg Gln Thr
                325   330   335

Phe Phe Asp Ser Lys Gly Phe Pro Lys Asn Ile Thr Asn Asn Arg Gly
                340   345   350

Lys Lys Arg Tyr Pro Asp Ser Lys Asp Leu Thr Met Val Leu Lys Thr
            355   360   365

Tyr Asp Thr Ser Phe Leu Asp Phe Leu Arg Arg Cys Leu Val Trp Glu
    370   375   380

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```
Pro Ser Leu Arg Met Thr Pro Asp Gln Ala Leu Lys His Ala Trp Ile
385             390             395             400


His Gln Ser Arg Asn Leu Lys Pro Gln Pro Arg Pro Gln Thr Leu Arg
            405             410             415


Lys Ser Asn Ser Phe Phe Pro Ser Glu Thr Arg Lys Asp Lys Val Gln
            420             425             430


Gly Cys His His Ser Ser Arg Lys Ala Asp Glu Ile Thr Lys Glu Thr
            435             440             445


Thr Glu Lys Thr Lys Asp Ser Pro Thr Lys His Val Gln His Ser Gly
    450             455             460


Asp Gln Gln Asp Cys Leu Gln His Gly Ala Asp Thr Val Gln Leu Pro
465             470             475             480


Gln Leu Val Asp Ala Pro Lys Lys Ser Glu Ala Ala Val Gly Ala Glu
            485             490             495


Val Ser Met Thr Ser Pro Gly Gln Ser Lys Asn Phe Ser Leu Lys Asn
            500             505             510


Thr Asn Val Leu Pro Pro Ile Val
        515             520


<210>  17
<211>  520
<212>  PRT
<213>  Homo sapiens

<400>  17

Met Pro Ala Ser Glu Leu Lys Ala Ser Glu Ile Pro Phe His Pro Ser
1           5               10              15


Ile Lys Thr Gln Asp Pro Lys Ala Glu Glu Lys Ser Pro Lys Lys Gln
            20              25              30


Lys Val Thr Leu Thr Ala Ala Glu Ala Leu Lys Leu Phe Lys Asn Gln
            35              40              45


Leu Ser Pro Tyr Glu Gln Ser Glu Ile Leu Gly Tyr Ala Glu Leu Trp
    50              55              60


Phe Leu Gly Leu Glu Ala Lys Lys Leu Asp Thr Ala Pro Glu Lys Phe
65              70              75              80
```

Ser Lys Thr Ser Phe Asp Asp Glu His Gly Phe Tyr Leu Lys Val Leu
            85   90   95

His Asp His Ile Ala Tyr Arg Tyr Glu Val Leu Glu Thr Ile Gly Lys
          100   105   110

Gly Ser Phe Gly Gln Val Ala Lys Cys Leu Asp His Lys Asn Asn Glu
          115   120   125

Leu Val Ala Leu Lys Ile Ile Arg Asn Lys Lys Arg Phe His Gln Gln
130   135   140

Ala Leu Met Glu Leu Lys Ile Leu Glu Ala Leu Arg Lys Lys Asp Lys
145   150   155   160

Asp Asn Thr Tyr Asn Val Val His Met Lys Asp Phe Phe Tyr Phe Arg
          165   170   175

Asn His Phe Cys Ile Thr Phe Glu Leu Leu Gly Ile Asn Leu Tyr Glu
          180   185   190

Leu Met Lys Asn Asn Asn Phe Gln Gly Phe Ser Leu Ser Ile Val Arg
          195   200   205

Arg Phe Thr Leu Ser Val Leu Lys Cys Leu Gln Met Leu Ser Val Glu
          210   215   220

Lys Ile Ile His Cys Asp Leu Lys Pro Glu Asn Ile Val Leu Tyr Gln
225   230   235   240

Lys Gly Gln Ala Ser Val Lys Val Ile Asp Phe Gly Ser Ser Cys Tyr
          245   250   255

Glu His Gln Lys Val Tyr Thr Tyr Ile Gln Ser Arg Phe Tyr Arg Ser
          260   265   270

Pro Glu Val Ile Leu Gly His Pro Tyr Asp Val Ala Ile Asp Met Trp
          275   280   285

Ser Leu Gly Cys Ile Thr Ala Glu Leu Tyr Thr Gly Tyr Pro Leu Phe
          290   295   300

Pro Gly Glu Asn Glu Val Glu Gln Leu Ala Cys Ile Met Glu Val Leu
305   310   315   320

Gly Leu Pro Pro Ala Gly Phe Ile Gln Thr Ala Ser Arg Arg Gln Thr

```
                    325                   330                      335

Phe Phe Asp Ser Lys Gly Phe Pro Lys Asn Ile Thr Asn Asn Arg Gly
            340                 345             350

Lys Lys Arg Tyr Pro Asp Ser Lys Asp Leu Thr Met Val Leu Lys Thr
            355                 360             365

Tyr Asp Thr Ser Phe Leu Asp Phe Leu Arg Arg Cys Leu Val Trp Glu
    370             375             380

Pro Ser Leu Arg Met Thr Pro Asp Gln Ala Leu Lys His Ala Trp Ile
385             390             395                 400

His Gln Ser Arg Asn Leu Lys Pro Gln Pro Arg Pro Gln Thr Leu Arg
            405             410             415

Lys Ser Asn Ser Phe Phe Pro Ser Glu Thr Arg Lys Asp Lys Val Gln
            420             425             430

Gly Cys His His Ser Ser Arg Lys Ala Asp Glu Ile Thr Lys Glu Thr
        435             440             445

Thr Glu Lys Thr Lys Asp Ser Pro Thr Lys His Val Gln His Ser Gly
    450             455             460

Asp Gln Gln Asp Cys Leu Gln His Gly Ala Asp Thr Val Gln Leu Pro
465             470             475             480

Gln Leu Val Asp Ala Pro Lys Lys Ser Glu Ala Ala Val Gly Ala Glu
            485             490             495

Val Ser Met Thr Ser Pro Gly Gln Ser Lys Asn Phe Ser Leu Lys Asn
            500             505             510

Thr Asn Val Leu Pro Pro Ile Val
            515             520
```